Shell Gadinia 30

Lubricants for medium-speed marine diesel engines running on distillate fuels

Shell Gadinia are premium quality multifunctional diesel engine lubricants that are specially designed for the most severe service main propulsion and auxiliary marine trunk piston engines burning distillate fuels with a sulphur content up to 1%. They also perform satisfactorily in smaller high-speed engines of fishing fleets that operate under arduous conditions and have small sumps.

**Performance, Features & Benefits**

- **Improved engine reliability:**
  Greater tolerance to engine overload or poor combustion due to improved piston cleanliness.
  Reduced deposits in piston ring belt and cylinder liners.

- **Lower maintenance costs:**
  Extended diesel engine life through reduced risk of ring sticking and breakage.
  Longer oil life, especially in high stress engines, because of Gadinia’s excellent resistance to oxidation and thermal degradation under severe operating conditions.
  Superior protection against corrosion for all engine components, due to Shell Gadinia’s unique formulation giving excellent alkalinity retention.
  Improved control of liner lacquer leads to better control of oil consumption and contributes to lower cost of operation.

- **Re-assurance:**
  Greater safety margin to protect highly loaded bearings, in the event of water contamination, because of Shell Gadinia’s improved water tolerance and separation in separators.

**Main Applications**

- Highly rated, medium speed, main propulsion & auxiliary trunk-piston marine diesel engines.
- Turbochargers, oil filled stern tubes and variable pitch propellers.
- Deck machinery & other marine applications requiring SAE 30 or 40 viscosity oils.

**Specifications, Approvals & Recommendations**

- Shell Gadinia is approved by leading trunk piston engine manufacturers.
- API CF

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

**Typical Physical Characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Gadinia 30</th>
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<tbody>
<tr>
<td>Kinematic Viscosity @40°C</td>
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<td>Kinematic Viscosity @100°C</td>
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<tr>
<td>Sulphated Ash % wt</td>
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<td>1.35</td>
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</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.
Health, Safety & Environment

• Health and Safety
  Shell Gadinia 30 is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

• Protect the Environment
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

• Advice
  Advice on applications not covered here may be obtained from your Shell representative.

• Condition Monitoring
  Shell RLA engine condition monitoring service enables the ship operator to monitor the condition of the oil and equipment and to take remedial action when necessary. This helps to avoid breakdowns and costly downtime.
  
  Shell RLA OPICA is an integrated software system enabling RLA data to be received electronically in the office and/or on the vessel. It contains powerful data management and graphics, enabling efficiency gains in report handling and machine condition monitoring.
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  Greater safety margin to protect highly loaded bearings, in the event of water contamination, because of Shell Gadinia’s improved water tolerance and separation in separators.

OEM endorsement by leading diesel engine manufacturers following extensive field approval trials, means that Shell Gadinia is suitable for the widest range of modern diesel engines.

Main Applications

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Shell Lubricants

GET TO KNOW THE NEW SHELL LUBRICANTS PORTFOLIO

DESIGNED TO MEET CHALLENGES
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<td>Shell Omala Oil RL 320</td>
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<td>Shell Omala Oil RL 460</td>
<td>Shell Morlina S4 B 460</td>
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<td>Shell Omala Oil RL 100</td>
<td>Shell Morlina S4 B 220</td>
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<td>Shell Omala Oil RL 150</td>
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<td>Shell Omala Oil RL 220</td>
<td>Shell Morlina S4 B 460</td>
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<tr>
<td>OLD PRODUCT</td>
<td>NEW / REPLACEMENT PRODUCT</td>
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<tr>
<td>Shell Therma Oil B</td>
<td>Shell Heat Transfer Oil S2</td>
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<tr>
<td>Shell Tivela Grease GL 00</td>
<td>Shell Gadus S5 V1-42W 00</td>
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<td>Shell Omala S4 WE 220</td>
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<td>Shell Omala S4 WE 320</td>
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<td>Shell Tivela Oil S 460</td>
<td>Shell Omala S4 WE 460</td>
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<td>Shell Tonna S3 M 220</td>
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<td>Shell Tonna Oil S 32</td>
<td>Shell Tonna S3 M 32</td>
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<td>Shell Transaxle Oil 75W-90</td>
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<td>Shell Transmission Oil MA 75W-90</td>
<td>Shell Spirax S6 GXME 75W-80</td>
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<td>Shell Valvata Oil 1000</td>
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<td>Shell Valvata Oil J 460</td>
<td>Shell Omala S1 W 460</td>
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<td>Shell Vitrea Oil 10</td>
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<td>Shell Vitrea Oil 32</td>
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<td>Shell Vitrea Oil 68</td>
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<td>Shell Vitrea Oil M 460</td>
<td>Shell Morlina S1 B 460</td>
</tr>
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</table>

- Direct replacement
- Recommended replacement

Contact your Shell Lubricants distributor for information about what products your company needs.
Previous Name: Shell Alvania Grease RL 2

Shell Gadus S2 V100 2

High Performance Multipurpose Grease

Shell Gadus S2 V100 2 is a general purpose grease based on a new lithium hydroxystearate soap thickener fortified with anti-oxidant, anti-wear and anti-rust additives.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- Reliable high temperature performance
  Very good performance up to +130°C, resulting in longer bearing life.

- Good oxidation and mechanical stability
  Resists the formation of deposits caused by oxidation at high operating temperatures. Shell Gadus S2 V100 greases are extremely stable under vibrations and give NO LEAKAGE even in repeated shock-loaded bearings.

- Good corrosion resistance characteristics
  Effective protection in hostile environments.

- Long storage life
  Does not alter in consistency during prolonged storage.

Main Applications

- Rolling element and plain grease lubricated bearings
- Electric motor bearings
- Sealed-for-life bearings
- Water pump bearings

Shell Gadus S2 V100 2 may be used under a wide range of operating conditions offering very significant advantages over conventional lithium greases at high temperature or in the presence of water.

A medium consistency grease designed, mainly, for general industrial lubrication. Ideal for centralised lubrication systems operating at normal temperatures.

Specifications, Approvals & Recommendations

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

Typical Physical Characteristics

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Gadus S2 V100 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NLGI Consistency</td>
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<td>2</td>
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<tr>
<td>Soap Type</td>
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<td>Lithium hydroxystearate</td>
</tr>
<tr>
<td>Base Oil (Type)</td>
<td></td>
<td>Mineral</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>cSt</td>
<td>IP 71 / ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity @100°C</td>
<td>cSt</td>
<td>IP 71 / ASTM D445</td>
</tr>
<tr>
<td>Cone Penetration, Worked @25°C</td>
<td>0.1mm</td>
<td>IP 50 / ASTM D217</td>
</tr>
<tr>
<td>Dropping Point</td>
<td>°C</td>
<td>IP 396</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.
Health, Safety & Environment

- **Health and Safety**
  Shell Gadus S2 V100 Grease is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Re-greasing Intervals**
  For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
**Technical Data Sheet**

**Previous Name: Shell Alvania Grease RL 3**

**Shell Gadus S2 V100 3**

**High Performance Multipurpose Grease**

Shell Gadus S2 V100 3 is a general purpose grease based on a new lithium hydroxystearate soap thickener fortified with anti-oxidant, anti-wear and anti-rust additives.

**DESIRED TO MEET CHALLENGES**

**Performance, Features & Benefits**

- **Reliable high temperature performance**
  Very good performance up to +130°C, resulting in longer bearing life.
- **Good oxidation and mechanical stability**
  Resists the formation of deposits caused by oxidation at high operating temperatures. Shell Gadus S2 V100 greases are extremely stable under vibrations and give NO LEAKAGE even in repeated shock-loaded bearings.
- **Good corrosion resistance characteristics**
  Effective protection in hostile environments.
- **Long storage life**
  Does not alter in consistency during prolonged storage.

**Specifications, Approvals & Recommendations**

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

**Main Applications**

- Rolling element and plain grease lubricated bearings
- Electric motor bearings
- Sealed-for-life bearings
- Water pump bearings

May be used under a wide range of operating conditions offering very significant advantages over conventional lithium greases at high temperature or in the presence of water.

- A medium/hard high performance industrial grease, particularly recommended for the lubrication of electrical motor bearings.

**Typical Physical Characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
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<td>Base Oil (Type)</td>
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<td>Mineral</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>cSt</td>
<td>IP 71 / ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity @100°C</td>
<td>cSt</td>
<td>IP 71 / ASTM D445</td>
</tr>
<tr>
<td>Cone Penetration, Worked @25°C</td>
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<td>IP 50 / ASTM D217</td>
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<tr>
<td>Dropping Point @25°C</td>
<td>°C</td>
<td>IP 396</td>
</tr>
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</table>

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.
Health, Safety & Environment

- Health and Safety
  Shell Gadus S2 V100 Grease is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- Protect the Environment
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- Re-greasing Intervals
  For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

- Advice
  Advice on applications not covered here may be obtained from your Shell representative.
Typical Physical Characteristics

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

<table>
<thead>
<tr>
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<td>Soap Type</td>
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<td>Lithium</td>
</tr>
<tr>
<td>Base Oil</td>
<td></td>
<td>Mineral</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C cSt</td>
<td>IP 71 / ASTM D445</td>
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<tr>
<td>Kinematic Viscosity @100°C cSt</td>
<td>IP 71 / ASTM D445</td>
<td>19</td>
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<td>Cone Penetration, Worked @25°C 0.1mm</td>
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<tr>
<td>Dropping Point</td>
<td>IP 396</td>
<td>180</td>
</tr>
</tbody>
</table>

Previous Names: Shell Alvania Grease EP(LF) 2, Shell Retinax EP 2

Shell Gadus S2 V220 2

High Performance Multipurpose Extreme Pressure Grease

Shell Gadus S2 V220 greases are high quality multipurpose, extreme-pressure greases based on a blend of high viscosity index mineral oils and a lithium hydroxystearate soap thickener and contain extreme-pressure and other proven additives to enhance their performance in a wide range of applications.

Shell Gadus S2 V220 greases are designed for multipurpose grease lubrication of rolling element and plain bearings as well as hinges and sliding surfaces such as those found in throughout most industrial and transport sectors.

DESIGNED TO MEET CHALLENGES

Performance, Features & Benefits

- **Outstanding Load Carrying Capacity**
  Shell Gadus S2 V220 greases contain special extreme-pressure additives which enable them to withstand heavy and shock loads without failure of the lubricant film.

- **Improved Mechanical Stability**
  This is particularly important in vibrating environments where poor mechanical stability can lead to grease softening with subsequent loss of lubrication performance and leakage.

- **Good Resistance to Water Wash-out**
  Shell Gadus S2 V220 greases have been formulated to offer resistance to water wash-out.

- **Oxidation Stability**
  Specially selected base oil components have excellent oxidation resistance. Their consistency will not alter in storage and they withstand high operating temperatures without hardening or forming bearing deposits.

- **Good Corrosion Resistance Characteristics**
  Shell Gadus S2 V200 greases reliably protect bearing surfaces against corrosion, even when a high amount of water is present.

Main Applications

Shell Gadus S2 V220 2 greases are designed for:

- Heavy duty bearings and general industrial lubrication.
- Heavy duty plain and rolling element bearings operating under harsh conditions including shock loading in wet environments.

Specifications, Approvals & Recommendations

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.
Health, Safety & Environment

- **Health and Safety**
  Shell Gadus S2 V220 Grease is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Hydraulic Brake Rubber Components**
  Care should be taken to ensure that the grease does NOT come into contact with hydraulic brake rubber components.

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Operating Temperature**
  Shell Gadus S2 V220 2 is recommended for the operating temperature range -20°C to +130°C.

- **Re-greasing Intervals**
  For bearings operating near their maximum recommended temperatures, re-greasing intervals should be reviewed.

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
Typical Physical Characteristics

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

## Shell Gadus S2 V220AD 2

### High Performance Multi-purpose Grease with Solids

Shell Gadus S2 V220AD Greases are high performance grease for the lubrication of bearings subjected to harsh conditions. They are based on high viscosity index mineral oil and a mixed lithium/calcium soap thickener and contains extreme-pressure, anti-oxidation, anti-wear, anti-corrosion and adhesion additives. It also contains solids to provide resistance to shock loading.

### DESIGNED TO MEET CHALLENGES

#### Performance, Features & Benefits

- **Good oxidation and mechanical stability**
  Resists the formation of deposits caused by oxidation at high operating temperatures and maintains consistency, reducing leakage.

- **Good corrosion resistance**
  Provides protection from the elements of corrosion.

- **For shock loaded conditions**
  Resists breakdown, softening and subsequent leakage under shock loads.

- **Good adhesion properties**
  Reduces losses and grease consumption.

- **Extreme pressure performance**
  Rig tests confirm EP additives in Shell Gadus S2 V220AD Greases prolong bearing life when subjected to heavy and shock loads.

#### Main Applications

- Shell Gadus S2 V220AD Greases are recommended for the lubrication of shock loaded heavy duty bearings working in damp hostile conditions. They are well-suited for use in off-highway applications and also for the lubrication of fifth wheels.

### Specifications, Approvals & Recommendations

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.

### Typical Physical Characteristics

<table>
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<tr>
<th>Properties</th>
<th>Method</th>
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<td>Base Oil</td>
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<td>Mineral</td>
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<td>Kinematic Viscosity @40°C [cSt]</td>
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</tr>
<tr>
<td>Kinematic Viscosity @100°C [cSt]</td>
<td>IP 71 / ASTM D445</td>
<td>18</td>
</tr>
<tr>
<td>Cone Penetration, Worked @25°C [0.1mm]</td>
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<td>265-295</td>
</tr>
<tr>
<td>Dropping Point [°C]</td>
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<td>175</td>
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<td>4 Ball Weld Load [Kg]</td>
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</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.
Health, Safety & Environment

* Health and Safety
Shell Gadus S2 V220AD Grease is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

* Protect the Environment
Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

* Operating Temperature Range
Operating Temperature Range: -25°C to +120°C, peak 130°C

* Advice
Advice on applications not covered here may be obtained from your Shell representative.
## HOW TO USE THIS GUIDE

Find your current bearing and circulating oil in the left-hand column and read across to find its new name or recommended replacement product.

Selected bearing and circulating oil products are shown. Please contact your Shell representative, customer service centre or Shell lubricants distributor for information on Shell’s full portfolio for your business. Or call the Technical Advice Centre on 13 16 18.

### OLD PRODUCT | NEW/REPLACEMENT PRODUCT
---|---
Shell Omala RL | Shell Morlina S4 B
- Extra long life
- Extra protection
- Severe applications

Shell Morlina S5 | Shell Morlina S2 BL*  
- Versatile protection
- Industrial applications

Shell Morlina 10 | Shell Morlina S2 B
- Versatile protection
- Industrial applications

Shell Morlina | Shell Morlina S2 B
- Versatile protection
- Industrial applications

### APPLICATION ICON KEY
- **Roller bearing**
- **Enclosed gear**
- **Factory/machine applications**
- **High load**
- **High temperature**
- **Plain bearing**

### ISO VISCOSITY GRADES AVAILABLE:

- Shell Morlina S2 B - 150, 220, 320
- Shell Morlina S2 BL - 5, 10
- Shell Morlina S4 B - 220, 460

For more information, please contact

The Shell Company of Australia Limited (ABN 46 004 610 459)
8 Redfern Rd, Hawthorn East, Victoria 3123
Emergency phone number (24 hours) 1800 651 818
Technical Assistance Australia 13 16 18
shell.com.au/lubricants
Shell Omala S2 G 68

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

• Long oil life – Maintenance saving
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

• Excellent wear & corrosion protection
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components.
  Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

• Maintaining system efficiency
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas.
  Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

• Highly loaded gears
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

• Other applications
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
  For highly loaded worm drives, Shell Omala S4 W E, Shell Molina S4 B and Shell Omala S1 W are recommended.
  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

Specifications, Approvals & Recommendations

• MAG (Cincinnati Machine) P-63
• US Steel 224
• AGMA EP 9005 - EO 2
• ISO 12925-1 Type CKD
• DIN 51517 - Part 3 CLP

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Main Applications

• Enclosed industrial gear systems
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.
**Typical physical characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Omala S2 G</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Viscosity Grade</td>
<td>ISO 3448</td>
<td>68</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>ISO 3104</td>
<td>68</td>
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<tr>
<td>Kinematic Viscosity @100°C</td>
<td>ISO 3104</td>
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<tr>
<td>Viscosity Index</td>
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<td>Density @15°C</td>
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<td>Flash Point (CO C)</td>
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<td>Pour Point</td>
<td>ISO 3016</td>
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</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

**Health, Safety & Environment**

- **Health and Safety**
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

**Additional Information**

- **Advice**
  Advice on applications not covered here may be obtained from your shell representative.
Shell Omala S2 G 100

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

- **Long oil life – Maintenance saving**
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

- **Excellent wear & corrosion protection**
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components.
  Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

- **Maintaining system efficiency**
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas.
  Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

Main Applications

- **Enclosed industrial gear systems**
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.

- **Highly loaded gears**
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

- **Other applications**
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
  For highly loaded worm drives, Shell Omala S4 WE, Shell Morlina S4 B and Shell Omala S1 W are recommended.
  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.
  Shell do not recommend/support use in systems with fine filtration (<10 microns) because sustained foam control performance is not assured. Please consult your Shell Local Technical Advisor and Product Application Specialist

Specifications, Approvals & Recommendations

- **Fives Cincinnati Machine P-76**
- **AGMA EP 9005 - EO2**
- **ISO 12925-1 Type CKD**
- **DIN 51517 - Part 3 CLP**

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.
**Typical Physical Characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Omala S2 G 100</th>
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<td>ISO Viscosity Grade</td>
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These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

**Health, Safety & Environment**

- **Health and Safety**
  
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

**Additional Information**

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.
Shell Omala S2 G 150

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

- Long oil life – Maintenance saving
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

- Excellent wear & corrosion protection
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components. Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

- Maintaining system efficiency
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas. Water can greaty accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

Main Applications

- Enclosed industrial gear systems
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.

- Highly loaded gears
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

- Other applications
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.

  For highly loaded worm drives, Shell Omala S4 WE, Shell Morlina S4 B and Shell Omala S1 W are recommended.

  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

  Shell do not recommend/support use in systems with fine filtration (<10 microns) because sustained foam control performance is not assured. Please consult your Shell Local Technical Advisor and Product Application Specialist.

Specifications, Approvals & Recommendations

- Fives Cincinnati P-77
- AGMA EP 9005 - EO2
- ISO 12925-1 Type CKD
- DIN 51517 - Part 3 (CLP)

  For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk.
Typical Physical Characteristics

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These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
Shell Omala S2 G 220

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

- **Long oil life – Maintenance saving**
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

- **Excellent wear & corrosion protection**
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components.
  Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

- **Maintaining system efficiency**
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas.
  Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

- **Highly loaded gears**
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

- **Other applications**
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
  For highly loaded worm drives, Shell Omala S4 WE, Shell Morlina S4 B and Shell Omala S1 W are recommended.
  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

Specifications, Approvals & Recommendations

- **M A G (Cincinnati Machine) P-74**
- **US Steel 224**
- **A G M A EP 9005 - EO 2**
- **ISO 12925-1 Type CKD**
- **DIN 51517 - Part 3 CLP**

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Main Applications

- **Enclosed industrial gear systems**
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.
Typical physical characteristics

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These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**

  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**

  Advice on applications not covered here may be obtained from your Shell representative.
Shell Omala S2 G

Viscosity - Temperature - Diagram

Temperature [°C]

Kinematic Viscosity [mm²/s]
Shell Omala S2 G 320 Extra Protection

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

- **Long oil life - Maintenance saving**
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

- **Excellent wear & corrosion protection**
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components.
  Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

- **Maintaining system efficiency**
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas.
  Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

- **Highly loaded gears**
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

- **Other applications**
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
  For highly loaded worm drives, Shell Omala S4 WE, Shell Morlina S4 B and Shell Omala S1 W are recommended.
  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

Specifications, Approvals & Recommendations

- MAG (Cincinnati Machine) P-59
- US Steel 224
- AGMA EP 9005 - EO2
- ISO 12925-1 Type CKD
- DIN 51517 - Part 3 CLP

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Main Applications

- **Enclosed industrial gear systems**
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.
Typical physical characteristics

<table>
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These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your shell representative.
Shell Omala S2 G

Viscosity - Temperature - Diagram
Shell Omala S2 G 460

Industrial Gear Oils

Shell Omala S2 G oils are high quality extreme-pressure oils designed primarily for the lubrication of heavy duty industrial gears. Their high load carrying capacity and anti-friction characteristics combine to offer superior performance in gears.

Performance, Features & Benefits

- **Long oil life – Maintenance saving**
  Shell Omala S2 G oils are formulated to resist thermal and chemical breakdown throughout the maintenance interval. They withstand high thermal loading and resist the formation of sludge to provide extended oil life capability, even with bulk oil temperatures of up to 100°C in certain applications.

- **Excellent wear & corrosion protection**
  Excellent load carrying capacity reduces gear tooth and bearing wear on steel components. Shell Omala S2 G has excellent corrosion protection, protecting steel components, even in the presence of contamination by water and solids.

- **Maintaining system efficiency**
  Shell Omala S2 G oils have excellent water separation properties, such that excess water can be drained easily from lubrication systems to help extend the life of the gears and ensure efficient lubrication of the contact areas. Water can greatly accelerate surface fatigue of gears and bearings as well as promoting ferrous corrosion on internal surfaces. Water contamination should therefore be avoided or removed as quickly as possible after the occurrence.

- **Highly loaded gears**
  Shell Omala S2 G oils have an effective full extreme pressure (EP) additive system allowing them to be used in highly-loaded gear systems.

- **Other applications**
  Shell Omala S2 G oils are suitable for lubrication of bearings and other components in circulating and splash-lubricated systems.
  For highly loaded worm drives, Shell Omala S4 W E, Shell Morlina S4 B and Shell Omala S1 W are recommended.
  For automotive hypoid gears, the appropriate Shell Spirax Oil should be used.

Specifications, Approvals & Recommendations

- MAG (Cincinnati Machine) P-35
- AGMA EP 9005 - EO 2
- ISO 12925-1 Type CKC
- DIN 51517 - Part 3 CLP

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Main Applications

- **Enclosed industrial gear systems**
  Shell Omala S2 G oils are formulated using an effective sulphur-phosphorus additive system to provide an extreme pressure performance which allow trouble-free application in most enclosed industrial gearboxes using steel spur and helical gears.
Typical physical characteristics

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Health, Safety & Environment

- Health and Safety
  Shell Omala S2 G is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- Protect the Environment
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- Advice
  Advice on applications not covered here may be obtained from your shell representative.
Shell Rimula R2 40 (CF/10TBN)

Monograde Heavy Duty Diesel Engine Oils

Shell Rimula R2 Energised Protection oils use proven combinations of additives that react to the needs of your engine. They feature an enhanced acid-control system for added protection and long life. Each dedicated additive releases its protective energy when needed to ensure reliable and consistent protection against deposits and wear with tough long-lasting action.

Performance, Features & Benefits

- **Engine cleanliness**
  Shell Rimula R2 oils incorporate an enhanced detergent additive system to control piston deposits and maintain good standards of engine cleanliness.

- **Dependable protection**
  High Total Base Number (10 TBN) to ensure suitable protection throughout the oil drain period in areas where fuel sulphur is high.

- **Long engine life**
  Continuous protection against corrosion and wear throughout the oil drain interval to prolong the life of the engine.

Main Applications

- **Automotive diesel engines**
  Shell Rimula R2 oils are designed for use in medium and heavy duty diesel engines using low sulphur/medium diesel fuel.

- **On and off-highway applications**
  Suitable for long distance trucking and similar ‘constant speed’ on-road operations as well as use in stop-start operation such as agriculture, construction and city driving.

- **Hydraulic and transmissions**
  Shell Rimula R2 monograde oils can be used in certain transmission and mobile hydraulic systems where use of monograde engine oils is recommended by the equipment manufacturer.

Specifications, Approvals & Recommendations

- **API: CF**
  For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Typical physical characteristics

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<th>Properties</th>
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<td>Pour Point</td>
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These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.
Health, Safety & Environment

- Health and Safety
  Shell Rimula R2 (CF/10TBN) is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- Protect the Environment
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- Advice
  Advice on applications not covered here may be obtained from your shell representative.
Shell Rimula R4 X 15W-40 (CI-4/E7/DH-1)

Heavy Duty Diesel Engine Oil

Shell Rimula R4 X contains selected additives that are designed to provide Triple Protection to improve engine and oil durability in 3 critical areas: Acid and Corrosion Control, Reduced Engine Wear and Deposit Control. It helps to lower maintenance and increase reliability of vehicles. It is suitable for most heavy-duty diesel engines, non turbocharged and turbocharged alike, for on and off highway applications and has a wide array of engine manufacturers' approvals.

Performance, Features & Benefits

- Acid and Corrosion Control
  Shell Rimula R4 X shows excellent control of acids by reducing the accumulation of acids and chemical corrosion of engine bearings. Harmful acids from fuel combustion are controlled by using selected detergent additives to neutralise them and help to prevent corrosion of metal surfaces.

- Reduced Engine Wear
  Shell Rimula R4 X offers high levels of engine wear protection in the critical areas of the valve train, piston ring and cylinder liners. This wear control is achieved through the addition of anti-wear additives that are designed to form protective films in metal-to-metal contacts when needed under different engine operating conditions, and by the use of soot dispersant additives to keep soot particles finely dispersed to help prevent wear.

- Deposit Control
  Shell Rimula R4 X helps to prevent oil thickening and the formation of harmful deposits in all areas of the engine, including sludge and piston deposits. The optimised detergent and dispersant additive system for Shell Rimula R4 X keeps engines cleaner than previous-generation Shell Rimula R3 products.

Main Applications

- Severe duty heavy duty diesel engines
  Shell Rimula R4 X provides demonstrated protection and performance in the latest high power heavy-duty diesel engines from European, US and Japanese manufacturers in both on-highway and off-highway applications.

- High Technology Low Emission Engines
  Shell Rimula R4 X is suitable for most modern low emission engines meeting Euro 5, 4, 3, 2, and US 2002 emission requirements.

  For the latest low emissions engines especially those fitted with exhaust diesel particulate filters (DPF), we recommend the use of our low-emissions products, Shell Rimula R4 L or Shell Rimula R5 LE.

Specifications, Approvals & Recommendations

- API: CI-4, CH-4, CG-4, CF-4, CF.SL
- ACEA: E7, E5, E3
- Global DHD-1
- Caterpillar: ECF-2, ECF-1-A
- Cummins: CES 20078,77,76,75,72,71
- DDC: 93K215
- Deutz: DQC III-10
- IVECO: T1 (Meets requirements)
- JASO: DH-1
- Mack: EO-M+, EO-M
- MAN: M3275-1
- MB Approval: 228.3
- MTU: Category 2
- Renault Trucks: RLD-2
- Volvo: VDS-3

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Help Desk.

### Typical Physical Characteristics

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These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

### Health, Safety & Environment

- **Health and Safety**
  Shell Rimula R4 X is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from www.epc.shell.com

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

### Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
Shell Rimula R6 M 10W-40 (E7/228.5)

Synthetic Heavy Duty Diesel Engine Oil

Shell Rimula R6 M features advanced multi-functional additive technology in fully synthetic base oil systems to deliver highly responsive protection that continuously adapts to your driving conditions. Protection is further enhanced through formulation synergies that enhance the activity of the oil resulting in maintenance saving long drain performance coupled with excellent protection against soot induced wear, piston and engine deposits and fuel economy capability. Shell Rimula R6 M is suitable for most Euro IV and Euro V engines without Diesel Particle Filter.

Performance, Features & Benefits

- **Maintenance saving**
  Shell Rimula R6 M meets the long oil drain requirements of leading engine makers such as Mercedes-Benz, MAN, DAF, Volvo and others to allow operators to optimize maintenance scheduling and maximize equipment availability without compromising durability.

- **Exceptional piston cleanliness**
  Shell Rimula R6 M uses advanced additive technology that builds on the reputation and performance of Shell Rimula engine oils for high levels of piston cleanliness essential for long engine life.

- **Low wear - long engine life**
  Shell Rimula R6 M meets the demanding wear protection of many European, American and Japanese engines, controlling bore polish and valve train wear thus maximising engine life.

- **Fuel economy**
  Shell Rimula R6 M can save money in fuel consumption compared to high viscosity grades.

Main Applications

- **On-highway heavy duty applications**
  Particularly suited for a wide range of trucking and transportation applications in vehicles using modern low-emission engines from Mercedes-Benz and MAN. Also meets or exceeds the performance requirements of other European makers such as Volvo, Renault, DAF, Deutz and Iveco as well as Cummins, Mack and many Japanese engine types.
  Not recommended for Caterpillar engines.

- **Low emission engine use**
  Shell Rimula R6 M meets the requirements of most European manufacturers for Euro 2,3 engines and most Euro IV and Euro V engines without Diesel Particle Filter.
  For Scania engines we recommend Shell Rimula R6 MS.
  For enhanced performance and protection of the latest low emission engines, especially those fitted with exhaust diesel particulate traps (DPF), we recommend the use of our advanced low-emissions products, Shell Rimula R6 LM/LME.

Specifications, Approvals & Recommendations

- ACEA: E7, E4
- API: CF
- Cummins: CES 20072
- Deutz: DQC IV-10
- IVECO T3 E4 (Meets Iveco specification)
- MAN: 3277
- MB Approval: 228.5
- MACK: EO-M Plus
- MTU: Category 3
- Renault trucks: RXD
- Volvo: VDS-3

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.
**Typical physical characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Rimula R6 M 10W-40 (E7/228.5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity Grade</td>
<td></td>
<td>10W-40</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>mm²/s</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity @100°C</td>
<td>mm²/s</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Dynamic Viscosity @-25°C</td>
<td>mPa s</td>
<td>ASTM D5293</td>
</tr>
<tr>
<td>Viscosity Index</td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>Total Base Number</td>
<td>mg KOH/g</td>
<td>ASTM D2896</td>
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<tr>
<td>Sulphated Ash</td>
<td>%</td>
<td>ASTM D874</td>
</tr>
<tr>
<td>density @15°C</td>
<td>kg/l</td>
<td>ASTM D4052</td>
</tr>
<tr>
<td>Flash Point</td>
<td>°C</td>
<td>ASTM D92 (COC)</td>
</tr>
<tr>
<td>Pour Point</td>
<td>°C</td>
<td>ASTM D97</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

**Health, Safety & Environment**

- **Health and Safety**
  Shell Rimula R6 M oils are unlikely to present any significant health or safety hazard when properly used in the recommended application, and good standards of industrial and personal hygiene are maintained.
  
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from [http://www.epc.shell.com/](http://www.epc.shell.com/)

- **Protect the Environment**
  Take used oil to an authorized collection point. Do not discharge into drains, soil or water.

**Additional Information**

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
Shell Tellus S2 M 32 Extra Protection

Industrial Applications

Shell Tellus S2 M fluids are high performance hydraulic fluids that use Shell’s unique patented technology to provide outstanding protection and performance in most manufacturing and many mobile equipment operations. They resist breakdown under heat or mechanical stress and help prevent damaging deposit formation that can decrease the efficiency of your hydraulic power system.

Performance, Features & Benefits

• Long fluid life – maintenance saving
  Shell Tellus S2 M fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.

  Shell Tellus S2 M fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.

• Outstanding wear protection
  Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions.

  Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ25, demonstrates how Shell Tellus S2 M fluids can help system components last longer.

• Maintaining system efficiency
  Superior cleanliness, excellent filterability and high performance water separation, air release and antifoam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

  The unique additive system in Shell Tellus S2 M, in combination with superior cleanliness (meeting the requirements of ISO 4406 21/19/16 class or better ex Shell plant filling lines as recognised by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level), helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.

  Shell Tellus S2 M fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation induced oxidation that can shorten fluid life.

Main Applications

• Industrial hydraulic systems
  With an extensive range of equipment maker approvals and recommendations, Shell Tellus S2 M fluids are suitable for a wide range of hydraulic power applications found in manufacturing and industrial environments.

• Mobile hydraulic fluid power transmission systems
  Shell Tellus S2 M fluids can be used effectively in mobile hydraulic power applications such as excavators and cranes, except where significant ambient temperature variations are encountered. For these applications we recommend the Shell Tellus “V” series.

• Marine hydraulic systems
  Suitable for marine applications where ISO HM category hydraulic fluids are recommended.
**Specifications, Approvals & Recommendations**

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Eaton Vickers (Brochure 694)
- Listed by Bosch Rexroth Ref 17421-001 and RD 220-1/04.03
- ISO 11158 (HM fluids)
- Afnor NF-E 48-603
- ASTM D6158-05 (HM fluids)
- DIN 51524 Part 2 HLP type
- Swedish Standard SS 15 54 34 AM
- GB 111181-1-94 (HM fluids)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

**Compatibility & Miscibility**

**Compatibility**

Shell Tellus S2 M fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

**Fluid Compatibility**

Shell Tellus S2 M fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

**Seal & Paint Compatibility**

Shell Tellus S2 M fluids are compatible with seal materials and paints normally specified for use with mineral oils.

**Properties**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Tellus S2 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Viscosity Grade</td>
<td>ISO 3448</td>
<td>32</td>
</tr>
<tr>
<td>ISO Fluid Type</td>
<td></td>
<td>HM</td>
</tr>
<tr>
<td>Kinematic Viscosity @0°C</td>
<td>ASTM D445</td>
<td>338</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>ASTM D445</td>
<td>32</td>
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<tr>
<td>Kinematic Viscosity @100°C</td>
<td>ASTM D445</td>
<td>5.4</td>
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<tr>
<td>Viscosity Index</td>
<td>ISO 2909</td>
<td>99</td>
</tr>
<tr>
<td>density @15°C</td>
<td>ISO 12185</td>
<td>0.875</td>
</tr>
<tr>
<td>Flash Point (COC)</td>
<td>ISO 2592</td>
<td>218</td>
</tr>
<tr>
<td>Pour Point °C</td>
<td>ISO 3016</td>
<td>-30</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

**Health, Safety & Environment**

**Health and Safety**

Shell Tellus S2 M hydraulic fluid is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

**Protect the Environment**

Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

**Additional Information**

**Advice**

Advice on applications not covered here may be obtained from your Shell representative.
Shell Tellus S2 M 46

Industrial Hydraulic Fluid

Shell Tellus S2 M fluids are high performance hydraulic fluids that use Shell's unique patented technology to provide outstanding protection and performance in most manufacturing and many mobile equipment operations. They resist breakdown under heat or mechanical stress and help prevent damaging deposit formation that can decrease the efficiency of your hydraulic power system.

Performance, Features & Benefits

• Long fluid life – maintenance saving
  Shell Tellus S2 M fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.
  Shell Tellus S2 M fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.

• Outstanding wear protection
  Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions.
  Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ25, demonstrates how Shell Tellus S2 M fluids can help system components last longer.

• Maintaining system efficiency
  Superior cleanliness, excellent filterability and high performance water separation, air release and antifoam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.
  The unique additive system in Shell Tellus S2 M, in combination with superior cleanliness (meeting the requirements of ISO 4406 21/19/16 class or better ex Shell plant filling lines as recognised by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level), helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.
  Shell Tellus S2 M fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation induced oxidation that can shorten fluid life.

Main Applications

• Industrial hydraulic systems
  With an extensive range of equipment maker approvals and recommendations, Shell Tellus S2 M fluids are suitable for a wide range of hydraulic power applications found in manufacturing and industrial environments.

• Mobile hydraulic fluid power transmission systems
  Shell Tellus S2 M fluids can be used effectively in mobile hydraulic power applications such as excavators and cranes, except where significant ambient temperature variations are encountered. For these applications we recommend the Shell Tellus “V” series.

• Marine hydraulic systems
  Suitable for marine applications where ISO HM category hydraulic fluids are recommended.
Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Eaton Vickers (Brochure 694)
- Listed by Bosch Rexroth Ref 17421-001 and RD 220-1/04.03
- ISO 11158 (HM fluids)
- Afnor NF-E 48-603
- ASTM 6158-05 (HM fluids)
- DIN 51524 Part 2 HLP type
- Swedish Standard SS 15 54 34 AM
- GB 111181-1-94 (HM fluids)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- **Compatibility**
  Shell Tellus S2 M fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

- **Fluid Compatibility**
  Shell Tellus S2 M fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

- **Seal & Paint Compatibility**
  Shell Tellus S2 M fluids are compatible with seal materials and paints normally specified for use with mineral oils.

### Typical physical characteristics

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Tellus S2 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Viscosity Grade</td>
<td>ISO 3448</td>
<td>46</td>
</tr>
<tr>
<td>ISO Fluid Type</td>
<td>HM</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>@0°C cSt</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>@40°C cSt</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>@100°C cSt</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Viscosity Index</td>
<td>ISO 2909</td>
<td>98</td>
</tr>
<tr>
<td>density</td>
<td>@15°C kg/l</td>
<td>ISO 12185</td>
</tr>
<tr>
<td>Flash Point (ISO 271)</td>
<td>°C</td>
<td>ISO 2592</td>
</tr>
<tr>
<td>Pour Point</td>
<td>°C</td>
<td>ISO 3016</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  Shell Tellus S2 M hydraulic fluid is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  - Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  - Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  - Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  - Advice on applications not covered here may be obtained from your Shell representative.
Shell Tellus S2 M 68

Industrial Hydraulic Fluid

Shell Tellus S2 M fluids are high performance hydraulic fluids that use Shell’s unique patented technology to provide outstanding protection and performance in most manufacturing and many mobile equipment operations. They resist breakdown under heat or mechanical stress and help prevent damaging deposit formation that can decrease the efficiency of your hydraulic power system.

Performance, Features & Benefits

- **Long fluid life – maintenance saving**
  Shell Tellus S2 M fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.
  Shell Tellus S2 M fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.

- **Outstanding wear protection**
  Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions. Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ25, demonstrates how Shell Tellus S2 M fluids can help system components last longer.

- **Maintaining system efficiency**
  Superior cleanliness, excellent filterability and high performance water separation, air release and antifoam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

The unique additive system in Shell Tellus S2 M, in combination with superior cleanliness (meeting the requirements of ISO 4406 21/19/16 class or better ex Shell plant filling lines as recognised by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level), helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.

Shell Tellus S2 M fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation induced oxidation that can shorten fluid life.

Main Applications

- **Industrial hydraulic systems**
  With an extensive range of equipment maker approvals and recommendations, Shell Tellus S2 M fluids are suitable for a wide range of hydraulic power applications found in manufacturing and industrial environments.

- **Mobile hydraulic fluid power transmission systems**
  Shell Tellus S2 M fluids can be used effectively in mobile hydraulic power applications such as excavators and cranes, except where significant ambient temperature variations are encountered. For these applications we recommend the Shell Tellus “V” series.

- **Marine hydraulic systems**
  Suitable for marine applications where ISO HM category hydraulic fluids are recommended.
Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Eaton Vickers (Brochure 694)
- Listed by Bosch Rexroth Ref 17421-001 and RD 220-1/04.03
- ISO 11158 (HM fluids)
- Afnor NF-E 48-603
- ASTM 6158-05 (HM fluids)
- DIN 51524 Part 2 HLP type
- Swedish Standard SS 15 54 34 AM
- GB 111181-1-94 (HM fluids)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- **Compatibility**
  Shell Tellus S2 M fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

- **Fluid Compatibility**
  Shell Tellus S2 M fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

- **Seal & Paint Compatibility**
  Shell Tellus S2 M fluids are compatible with seal materials and paints normally specified for use with mineral oils.

Typical physical characteristics

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Tellus S2 M</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Viscosity Grade</td>
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<td>ISO Fluid Type</td>
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<tr>
<td>Kinematic Viscosity @0°C</td>
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<td>Kinematic Viscosity @40°C</td>
<td>ASTM D445</td>
<td>68</td>
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<td>Kinematic Viscosity @100°C</td>
<td>ASTM D445</td>
<td>8.6</td>
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<td>Viscosity Index</td>
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<td>density @15°C</td>
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<td>0.886</td>
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<td>Flash Point (CO C)</td>
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<td>235</td>
</tr>
<tr>
<td>Pour Point °C</td>
<td>ISO 3016</td>
<td>-24</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  Shell Tellus S2 M hydraulic fluid is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your Shell representative.
**Shell Tellus S2 V 15**

*Industrial Hydraulic Fluid for wide temperature range*

Shell Tellus S2 V fluids are high performance hydraulic fluids that use Shell’s unique patented technology with excellent viscosity control under both severe mechanical stress and across a wide range of temperatures. They provide outstanding protection and performance in most mobile equipment and other applications subjected to wider ranges of ambient or operating temperatures.

### Performance, Features & Benefits

**Long fluid life – Maintenance saving**

Shell Tellus S2 V fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.

Shell Tellus S2 V fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.

Highly shear stable viscosity modifiers help minimize variations in the fluid properties throughout the fluid drain interval.

**Outstanding wear protection**

Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions. Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ25, demonstrates how Shell Tellus S2 V fluids can help system components last longer.

**Maintaining system efficiency**

The extended temperature range capability of Shell Tellus S2 V allows efficient operation of mobile equipment from cold start to normal operating conditions.

Superior cleanliness, excellent filterability and high performance water separation, air release and anti-foam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

The unique additive system in Shell Tellus S2 V, in combination with superior cleanliness (meeting the requirements of max ISO 4406 21/19/16 class, ex Shell filling lines. As recognized by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level) helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.

Shell Tellus S2 V fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation-induced oxidation that can shorten fluid life.

### Main Applications

**Mobile/exterior hydraulic applications**

Hydraulic and fluid power transmission systems in exposed environments can be subject to wide variations in temperature. The high viscosity index of Shell Tellus S2 V helps deliver responsive performance from cold start conditions to full load, severe duty operation.

**Precision hydraulic systems**

Precision hydraulic systems require excellent control of fluid viscosity over the operating cycle. Shell Tellus S2 V provides greater temperature-viscosity stability compared to ISO HM fluids that can help improve the performance of such systems.

For more severe operating conditions, longer fluid life and enhanced efficiency, the Shell Tellus “S3” and “S4” ranges offer additional performance benefits.
Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Eaton Vickers (Brochure 694)
- Swedish Standard SS 15 54 34 AM
- ISO 11158 (HV fluids)
- Afnor NF-E 48-603
- ASTM 6158-05 (HV fluids)
- DIN 51524 Part 3 Hvlp type
- GB 111181-1-94 (HV fluids)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- **Compatibility**
  Shell Tellus S2 V fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

- **Fluid Compatibility**
  Shell Tellus S2 V fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

- **Seal & Paint Compatibility**
  Shell Tellus S2 V fluids are compatible with seal materials and paints normally specified for use with mineral oils.

**Typical physical characteristics**

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Tellus S2 V</th>
</tr>
</thead>
<tbody>
<tr>
<td>ISO Viscosity Grade</td>
<td>ISO 3448</td>
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</tr>
<tr>
<td>ISO Fluid Type</td>
<td>HV</td>
<td></td>
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<tr>
<td>Kinematic Viscosity @-20°C</td>
<td>cSt</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity @40°C</td>
<td>cSt</td>
<td>ASTM D445</td>
</tr>
<tr>
<td>Kinematic Viscosity @100°C</td>
<td>cSt</td>
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<tr>
<td>Viscosity Index @15°C</td>
<td>ISO 2909</td>
<td>142</td>
</tr>
<tr>
<td>density @15°C</td>
<td>kg/l</td>
<td>ISO 12185</td>
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<tr>
<td>Flash Point (CO C)</td>
<td>°C</td>
<td>ISO 2592</td>
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<tr>
<td>Pour Point</td>
<td>°C</td>
<td>ISO 3016</td>
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<tr>
<td>Dielectric Strength*</td>
<td>kV</td>
<td>ASTM D877</td>
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</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

* Dielectric strength value applies only to "point of manufacture" at a Shell authorized manufacturing facility. As with all hydraulic fluids, contamination with water or particulate leads to a reduction in Dielectric strength.

Health, Safety & Environment

- Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your shell representative.
Shell Tellus S2 V 32

Industrial Hydraulic Fluid for wide temperature range

Shell Tellus S2 V fluids are high performance hydraulic fluids that use Shell’s unique patented technology with excellent viscosity control under both severe mechanical stress and across a wide range of temperatures. They provide outstanding protection and performance in most mobile equipment and other applications subjected to wider ranges of ambient or operating temperatures.

Performance, Features & Benefits

- **Long fluid life – Maintenance saving**
  Shell Tellus S2 V fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.

  Shell Tellus S2 V fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.

  Highly shear stable viscosity modifiers help minimize variations in the fluid properties throughout the fluid drain interval.

- **Outstanding wear protection**
  Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions.

  Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ25, demonstrates how Shell Tellus S2 V fluids can help system components last longer.

- **Maintaining system efficiency**
  The extended temperature range capability of Shell Tellus S2 V allows efficient operation of mobile equipment from cold start to normal operating conditions.

  Superior cleanliness, excellent filterability and high performance water separation, air release and anti-foam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

The unique additive system in Shell Tellus S2 V, in combination with superior cleanliness (meeting the requirements of max ISO 4406 21/19/16 class, ex Shell filling lines. As recognized by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level) helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.

Shell Tellus S2 V fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation-induced oxidation that can shorten fluid life.

Main Applications

- **Mobile/exterior hydraulic applications**
  Hydraulic and fluid power transmission systems in exposed environments can be subject to wide variations in temperature. The high viscosity index of Shell Tellus S2 V helps deliver responsive performance from cold start conditions to full load, severe duty operation.

- **Precision hydraulic systems**
  Precision hydraulic systems require excellent control of fluid viscosity over the operating cycle. Shell Tellus S2 V provides greater temperature-viscosity stability compared to ISO HM fluids that can help improve the performance of such systems.

  For more severe operating conditions, longer fluid life and enhanced efficiency, the Shell Tellus “S3” and “S4” ranges offer additional performance benefits.
Typical physical characteristics

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

* Dielectric strength value applies only to “point of manufacture” at a Shell authorized manufacturing facility. As with all hydraulic fluids, contamination with water or particulate leads to a reduction in Dielectric strength.

Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
- Eaton Vickers (Brochure 694)
- Swedish Standard SS 15 54 34 AM
- ISO 11158 (HV fluids)
- Afnor NF-E 48-603
- ASTM 6158-05 (HV fluids)
- DIN 51524 Part 3 Hvlp type
- GB 111181-1-94 (HV fluids)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- **Compatibility**
  Shell Tellus S2 V fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

- **Fluid Compatibility**
  Shell Tellus S2 V fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

- **Seal & Paint Compatibility**
  Shell Tellus S2 V fluids are compatible with seal materials and paints normally specified for use with mineral oils.

### Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Method</th>
<th>Shell Tellus S2 V</th>
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<tr>
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</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

### Health, Safety & Environment

- Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

### Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your shell representative.
Shell Tellus S2 V 46

Industrial Hydraulic Fluid for wide temperature range

Shell Tellus S2 V fluids are high performance hydraulic fluids that use Shell’s unique patented technology with excellent viscosity control under both severe mechanical stress and across a wide range of temperatures. They provide outstanding protection and performance in most mobile equipment and other applications subjected to wider ranges of ambient or operating temperatures.

Performance, Features & Benefits

- Long fluid life – Maintenance saving
  Shell Tellus S2 V fluids help extend equipment maintenance intervals by resisting thermal and chemical breakdown. This minimizes sludge formation and provides excellent performance in the industry standard ASTM D943 TOST test (Turbine Oil Stability Test), providing better reliability and system cleanliness.
  Shell Tellus S2 V fluids also have good stability in the presence of moisture, which ensures long fluid life and reduces the risk of corrosion and rusting, particularly in moist or humid environments.
  Highly shear stable viscosity modifiers help minimize variations in the fluid properties throughout the fluid drain interval.

- Outstanding wear protection
  Proven zinc-based anti-wear additives are incorporated to be effective throughout the range of operating conditions, including low load and severe duty high load conditions.
  Outstanding performance in a range of piston and vane pump tests, including the tough Denison T6C (dry and wet versions) and the demanding Vickers 35VQ 25, demonstrates how Shell Tellus S2 V fluids can help system components last longer.

- Maintaining system efficiency
  The extended temperature range capability of Shell Tellus S2 V allows efficient operation of mobile equipment from cold start to normal operating conditions.
  Superior cleanliness, excellent filterability and high performance water separation, air release and anti-foam characteristics all help contribute to maintaining or enhancing the efficiency of hydraulic systems.

The unique additive system in Shell Tellus S2 V, in combination with superior cleanliness (meeting the requirements of max ISO 4406 21/19/16 class, ex Shell filling lines. As recognized by DIN 51524 specification, the oil is exposed to various influences with transport and storage that could effect the cleanliness level) helps reduce the impact of contaminants on filter blocking, allowing both extended filter life and use of finer filtration for extra equipment protection.

Shell Tellus S2 V fluids are formulated for fast air release without excessive foaming to help efficient hydraulic power transfer and minimise fluid and equipment impacts of cavitation-induced oxidation that can shorten fluid life.

Main Applications

- Mobile/exterior hydraulic applications
  Hydraulic and fluid power transmission systems in exposed environments can be subject to wide variations in temperature. The high viscosity index of Shell Tellus S2 V helps deliver responsive performance from cold start conditions to full load, severe duty operation.

- Precision hydraulic systems
  Precision hydraulic systems require excellent control of fluid viscosity over the operating cycle. Shell Tellus S2 V provides greater temperature-viscosity stability compared to ISO HM fluids that can help improve the performance of such systems.
  For more severe operating conditions, longer fluid life and enhanced efficiency, the Shell Tellus “S3” and “S4” ranges offer additional performance benefits.
Typical physical characteristics

These characteristics are typical of current production. Whilst future production will conform to Shell's specification, variations in these characteristics may occur.

* Dielectric strength value applies only to "point of manufacture" at a Shell authorized manufacturing facility. As with all hydraulic fluids, contamination with water or particulate leads to a reduction in Dielectric strength.

Specifications, Approvals & Recommendations

- Denison Hydraulics (HF-0, HF-1, HF-2)
- Cincinnati Machine P-68 (ISO 32), P-70 (ISO 46), P-69 (ISO 68)
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For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.

Compatibility & Miscibility

- Compatibility
  Shell Tellus S2 V fluids are suitable for use with most hydraulic pumps. However, please consult your Shell Representative before using in pumps containing silver plated components.

- Fluid Compatibility
  Shell Tellus S2 V fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

- Seal & Paint Compatibility
  Shell Tellus S2 V fluids are compatible with seal materials and paints normally specified for use with mineral oils.

### Properties

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<tr>
<th>Properties</th>
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<tr>
<td>ISO Viscosity Grade</td>
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<tr>
<td>kV</td>
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</table>

Compatibility & Miscibility

- Fluid Compatibility
  Shell Tellus S2 V fluids are compatible with most other mineral oil based hydraulic fluids. However, mineral oil hydraulic fluids should not be mixed with other fluid types (e.g. environmentally acceptable or fire resistant fluids).

Health, Safety & Environment

- Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- Protect the Environment
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- Advice
  Advice on applications not covered here may be obtained from your shell representative.
Variable conditions
Constant evolution
Your equipment depends on reliable performance from its hydraulic systems, so your choice of hydraulic oil is crucial. Some hydraulic oils poorly withstand changes in temperature or variations in working conditions.

By using low-performing oils, you risk:
- Corrosion and sludge build-up
- Increased wear
- Cavitation (air pockets)
- Filter blocking and valve sticking
- Increased oil use

These problems can lead to:
- Equipment damage
- Premature failure and replacement of components
- Loss of operating precision
- Excessive noise
- Increased maintenance
- Expensive downtime

Shell Tellus – keeping you ahead
In many cases, hydraulic systems are required to operate under variable conditions, for instance in outdoor applications where temperatures can change with the season or throughout the day, or when mobile equipment is transported from one site to another. Designed to give reliable hydraulic performance in a wide range of temperatures, the new Shell Tellus variable temperature hydraulic oils include a new polymer technology that helps them outperform major competitors and protect your investment. Shell Tellus is the world’s leading hydraulic brand, and has now become better than ever.
keep constant: the use of a hydraulic oil that evolves

Shell Tellus variable temperature hydraulic oils are designed to avoid problems related to low-performing lubricants, to reduce your maintenance costs and to help you to:

- **Reduce oil consumption and improve equipment protection** through outstanding shear and oxidation stability
- **Start up quickly** thanks to excellent low-temperature performance
- **Maintain precision of machinery** when either hot or cold or under high loads thanks to new polymer technology
- **Reduce wear and corrosion.** Strong hydrolytic stability and wear protection reduce the negative impact of unavoidable water condensation in your machinery after shutdown
- **Reduce your number of hydraulic oil grades** as the wide temperature range will allow you to use one oil in a wide range of environments

Anti-wear performance for longer equipment life

Without any doubt, one of the most critical parts of a hydraulic system is the pump. Whether they are gear pumps, vane pumps, axial piston pumps, or radial piston pumps, they are all exposed to severe wear by running at high revolutions over extended periods of time, handling high temperatures and pressures. In highly demanding industry tests such as the new Denison T6H, next-generation Shell Tellus T demonstrated excellent lubricating performance and resistance to wear in pumps.
Effective from start to finish
Tellus variable temperature hydraulic oils have been developed to maintain their viscosity throughout a wide temperature range. Unlike ordinary hydraulic oils, they contain new polymer technology, unique to these kinds of lubricants. After a cold start-up, the heat-activated polymers will ensure that the hydraulic oil retains correct viscosity when the oil temperature increases.

Secondly, the polymers have a tremendous shear strength – making them up to twice as stable as major competitors** – ensuring that correct viscosity is maintained even under high loads.

* as shown in the Shear Stability Test. See page 6.

Suitable for stationary and mobile equipment
The new Shell Tellus variable temperature oil range has been developed to keep a wide range of equipment operating in variable temperature conditions, including:

- Lifts and cranes
- High-precision presses
- Off-road hydraulics
- Diggers, earth movers and snow ploughs
- Refuse collection vehicles
- Open-cast mine machinery
- Bobcats
- Marine applications
Next generation Shell Tellus T complies with the latest specifications and the most rigorous tests of relevant original equipment manufacturers. For detailed information, please refer to the product data sheet.

**Shell Tellus variable temperature range**

<table>
<thead>
<tr>
<th>Type</th>
<th>Viscosity index</th>
<th>Characteristics</th>
</tr>
</thead>
</table>
| Shell Tellus Oils T | 140             | • "Multigrade" hydraulic fluid  
|                   |                 | • Next generation Shell Tellus Oil Additive Technology  
|                   |                 | • ZnDTP-based package  
|                   |                 | • Excellent shear stability  |
| Shell Tellus Oils TX | 160             | • "Multigrade" hydraulic fluid  
|                   |                 | • ZnDTP-based package with enhanced EP performance  
|                   |                 | • Class-leading shear stability  |
| Shell Tellus Oils STX | 160             | • "Multigrade" hydraulic fluid  
|                   |                 | • New Unique Shell Patented Additive Technology  
|                   |                 | • Ashless-based package  
|                   |                 | • Very good shear stability  
|                   |                 | • STX is metal-free  |
| Shell Tellus Arctic  | 300             | • "Multigrade" hydraulic fluid  
|                    |                 | • New Unique Shell Patented Additive Technology  
|                    |                 | • Ashless-based package  
|                    |                 | • Class-leading performance in low-temperature climates  |
Shell Tellus T is the overall best-performing product and the only product meeting all test requirements (when compared to relevant competitors with a similar viscosity index):

**Shear Stability - For maintained equipment protection**

It is relatively simple to improve the viscosity index (resistance to viscosity change when exposed to variations in temperature), of any given hydraulic oil. Formulating a high viscosity index hydraulic oil that resists shearing, and thus loss of viscosity, at moderate to high temperatures is however difficult. By carefully selecting the type and amount of polymers, it is possible to ensure the product maintains its performance after intensive use. Next generation Tellus T provides superb lubrication to the most sensitive parts of the pump in all conditions, avoiding the detrimental consequences of lubrication film interruption.

**Hydrolytic Stability - For longer fluid life and protection against corrosion**

Protection of the inner parts of a hydraulic system is relatively easy if it is completely clean and free from water. Unfortunately, real-life tests show that most of the time the oil inside a hydraulic system contains small but still damaging amounts of water. Free water not only causes corrosion in the delicate metal surfaces of servo valves, but also degrades the oil itself through increased acidity levels. Next generation Tellus T shows excellent hydrolytic, thermal and oxidative stability, thanks to the same successfully proven additive package of the next generation Tellus oils for stationary applications.

**Low temperature pumpability - For fast start-up and improved energy efficiency**

Pour Point has often been used in the industry to denote the ability of a hydraulic oil to flow at low temperature. However pumpability or T°C at which the oil reaches a maximum dynamic viscosity of 750 cPoise is a much more representative test as it exposes the oil to mechanical conditions similar to the ones it will have inside your equipment. Next generation Tellus T is formulated without compromising performance at low temperature, ensuring accurate operation from the beginning, low friction and quick start-up time, resulting in a more efficient use of energy.
A partner you can rely on

With the introduction of the improved Tellus variable temperature hydraulic range with new polymer technology, Shell continues to produce innovative industrial fluids for the benefit of customers all over the world. Together with Tellus, Shell offers a full complementary portfolio of other Factory Plant Maintenance and Transport lubricants. Our global presence and expertise also ensure that an extensive range of support services is available to you everywhere you work.

Outstanding performance in variable temperatures

By using the new Tellus range, you can continue operating day and night, in any season. These dedicated hydraulic oils will help you to:

• lower your maintenance costs
• extend oil drain intervals
• better protect your equipment
• increase productivity
**Full FPM range**

Shell also manufactures a full range of factory plant maintenance products designed to give you improved protection, longer service life and reduced wear.

<table>
<thead>
<tr>
<th>Category</th>
<th>Product</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>Gear oils</td>
<td>Shell Omala and Tivela</td>
<td>An extensive range of high-performance gear oils for a wide range of applications</td>
</tr>
<tr>
<td>Compressor oils</td>
<td>Shell Corena</td>
<td>High-quality compressor oils</td>
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<tr>
<td>Refrigerator compressor oils</td>
<td>Shell Clavus</td>
<td>High-quality refrigerator compressor oils</td>
</tr>
<tr>
<td>Bearing &amp; circulating oils</td>
<td>Shell Morlina</td>
<td>Premium-quality bearing &amp; circulating oils available in a wide range of viscosities for a large number of industrial applications</td>
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<tr>
<td>Fire-resistant hydraulic fluids</td>
<td>Shell Irus</td>
<td>A full range of very high-performance fluids for high fire risk areas</td>
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<tr>
<td>Industrial greases</td>
<td>Shell Albida and Alvania</td>
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<tr>
<td>Environmentally considerate</td>
<td>Shell Naturelle</td>
<td>A full range of environmentally considerate high-quality products</td>
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<td>lubricants and greases</td>
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<td>Engine oils</td>
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<td>Heavy-duty diesel engine oils</td>
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<tr>
<td>Transport gear and axle oils</td>
<td>Shell Spirax</td>
<td>Full portfolio of heavy-duty transport gear and axle oils</td>
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Local product portfolio might vary slightly. Please consult your Shell representative for more information.
Shell Turbo T 46

High Quality Industrial Steam & Gas Turbine Oils

Shell Turbo Oils T have long been regarded as the industry standard turbine oil. Building on this reputation, Shell Turbo Oils T have been developed to offer improved performance capable of meeting the demands of the most modern steam turbine systems and light duty gas turbines, which require no enhanced anti-wear performance for the gearbox. Shell Turbo Oils T are formulated from high quality hydrotreated base oils and a combination of zinc-free additives that provide excellent oxidative stability, protection against rust & corrosion, low foaming and excellent demulsibility.

Performance, Features & Benefits

- **Strong Control of Oxidation**
  The use of inherently oxidatively stable base oils together with an effective inhibitor package provides high resistance to oxidative degradation. The result is extended oil life, minimising the formation of aggressive corrosive acids, deposits and sludge, reducing your operating costs.

- **High Resistance to Foaming and Rapid Air Release**
  The oils are formulated with an anti-foam additive, which generally controls foam formation. This feature coupled with fast air-release from the lubricant reduces the possibility of problems such as pump cavitation, excessive wear and premature oil oxidation, giving you increased system reliability.

- **Positive Water-Shedding Properties**
  Robust demulsibility control such that excess water, commonplace in steam turbines, can be drained easily from the lubrication system, minimising corrosion and premature wear, lowering the risk of unplanned maintenance.

- **Excellent Rust & Corrosion Protection**
  Prevents the formation of rust and guards against onset of corrosion ensuring protection for equipment following exposure to humidity or water during operation and during shut-downs, minimising maintenance.

- **Resistant to Reaction with Ammonia**
  The use of highly refined base oils and specific additives, resistant to attack by ammonia, minimises the possibility of damaging oil soluble/insoluble ammonia compounds being formed in the lubricant. Shell Turbo Oils T mitigates the formation of these deposits, which could impair the reliable operation of bearings and seal oil systems.

Main Applications

Shell Turbo Oils T are available in ISO grades 32, 46, 68 & 100 suited for application in the following areas:

- Industrial steam turbines & light duty gas turbines which require no enhanced anti-wear performance for the gearbox
- Hydroelectric turbine lubrication
- Numerous applications where strong control over rust and oxidation is required
- Centrifugal and axial, dynamic turbo-compressors and pumps where an R&O type or turbine oil is recommended

Specifications, Approvals & Recommendations

- Siemens Power Generation TLV 9013 04 & TLV 9013 05
- Alstom Power Turbo-Systems Htd 90-117
- Man Turbo SP 079984 D0000 E99
- MAG IAS, LLC (formally Cincinnati Machine): P-55
- General Electric GEK 28143b - Type II
- DIN 51515-1 TD and DIN 51515-2 TG
- ISO 8068, L-TSA and L-TGA
- Solar ES 9-224W Class II
- GEC Alstom N BA P50001A
- JIS K 2213: 2006 Type 2
- ASTM D4304, Type I and Type III
- GB11120, L-TSA and L-TGA
- Indian Standard IS 1012: 2002
- Alstom Power Hydro Generators (spec HTW T600050)
- Dresser Rand (spec 003-406-001)
- Andritz Hydro
- Siemens Turbo Compressors (spec 800 037 98)

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Helpdesk, or the OEM Approvals website.
Typical physical characteristics

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
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These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

Health, Safety & Environment

- **Health and Safety**
  Shell Turbo T 46 is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.
  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.
  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

Additional Information

- **Advice**
  Advice on applications not covered here may be obtained from your shell representative.
Shell Turbo **T100**

*High Quality Industrial Steam & Gas Turbine Oils*

Shell Turbo Oils T have long been regarded as the industry standard turbine oil. Building on this reputation, Shell Turbo Oils T have been developed to offer improved performance capable of meeting the demands of the most modern steam turbine systems and light duty gas turbines, which require no enhanced anti-wear performance for the gearbox. Shell Turbo Oils T are formulated from high quality hydrotreated base oils and a combination of zinc-free additives that provide excellent oxidative stability, protection against rust & corrosion, low foaming and excellent demulsibility.

### Performance, Features & Benefits

- **Strong Control of Oxidation**
  The use of inherently oxidatively stable base oils together with an effective inhibitor package provides high resistance to oxidative degradation. The result is extended oil life, minimising the formation of aggressive corrosive acids, deposits and sludge, reducing your operating costs.

- **High Resistance to Foaming and Rapid Air Release**
  The oils are formulated with an anti-foam additive, which generally controls foam formation. This feature coupled with fast air-release from the lubricant reduces the possibility of problems such as pump cavitation, excessive wear and premature oil oxidation, giving you increased system reliability.

- **Positive Water-Shedding Properties**
  Robust demulsibility control such that excess water, commonplace in steam turbines, can be drained easily from the lubrication system, minimising corrosion and premature wear, lowering the risk of unplanned maintenance.

- **Excellent Rust & Corrosion Protection**
  Prevents the formation of rust and guards against onset of corrosion ensuring protection for equipment following exposure to humidity or water during operation and during shut-downs, minimising maintenance.

### Main Applications

Shell Turbo Oils T are available in ISO grades 32, 46, 68 & 100 and are suited for application in the following areas:

- Industrial steam turbines & light duty gas turbines which require no enhanced anti-wear performance for the gearbox;
- Hydroelectric turbine lubrication;
- Numerous applications where strong control over rust and oxidation is required.
- Centrifugal and axial, dynamic turbo-compressors and pumps where an R&O type or turbine oil is recommended.

### Specifications, Approvals & Recommendations

- General Electric GEK 28143b Type III
- DIN 51515-1 TD
- ISO 8068, L-THA
- ASTM D4304, Type I
- GB11120-2011, L-TSA
- Indian Standard IS 1012:2002

For a full listing of equipment approvals and recommendations, please consult your local Shell Technical Help Desk, or the OEM Approvals website.
### Typical physical characteristics

<table>
<thead>
<tr>
<th>Properties</th>
<th>Method</th>
<th>Shell Turbo Oil T</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity @40°C</td>
<td>cSt</td>
<td>100</td>
</tr>
<tr>
<td>Viscosity @100°C</td>
<td>cSt</td>
<td>11.7</td>
</tr>
<tr>
<td>Viscosity Index</td>
<td>ASTM D2270</td>
<td>105</td>
</tr>
<tr>
<td>Colour</td>
<td>ASTM D1500</td>
<td>L1.0</td>
</tr>
<tr>
<td>Density g/mL</td>
<td>ASTM D4052</td>
<td>0.8732</td>
</tr>
<tr>
<td>Pour Point °C</td>
<td>ASTM D97</td>
<td>&lt;-24</td>
</tr>
<tr>
<td>Flash Point (CO C)</td>
<td>ASTM D92</td>
<td>&gt;250</td>
</tr>
<tr>
<td>Total Acid Number mg KOH/g</td>
<td>ASTM D974</td>
<td>0.10</td>
</tr>
<tr>
<td>Air Release, Minutes min</td>
<td>ASTM D3427</td>
<td>8</td>
</tr>
<tr>
<td>Water Demulsibility min</td>
<td>ASTM D1401</td>
<td>20</td>
</tr>
<tr>
<td>Rust Control</td>
<td>ASTM D665B</td>
<td>Pass</td>
</tr>
<tr>
<td>Oxidation Control Test - Test Life hrs</td>
<td>ASTM D943</td>
<td>5,000</td>
</tr>
<tr>
<td>Oxidation Control Test - Rповт - minutes</td>
<td>ASTM D2272</td>
<td>500</td>
</tr>
</tbody>
</table>

These characteristics are typical of current production. Whilst future production will conform to Shell’s specification, variations in these characteristics may occur.

### Health, Safety & Environment

- **Health and Safety**
  
  Shell Turbo T is unlikely to present any significant health or safety hazard when properly used in the recommended application and good standards of personal hygiene are maintained.

  Avoid contact with skin. Use impervious gloves with used oil. After skin contact, wash immediately with soap and water.

  Guidance on Health and Safety is available on the appropriate Material Safety Data Sheet, which can be obtained from http://www.epc.shell.com/

- **Protect the Environment**
  
  Take used oil to an authorised collection point. Do not discharge into drains, soil or water.

### Additional Information

- **Advice**
  
  Advice on applications not covered here may be obtained from your shell representative.
Shell Gadus is a comprehensive family of greases designed to meet your needs. The Shell Gadus range includes multipurpose greases that can be used in almost any product, meeting, as well as specialist greases, including advanced polyurea synthetic products designed for the most severe environments and long-life applications, and a range of organo-phosphates. Whether you need greases for steel production, mining, construction, power generation, general or automotive manufacturing, or applications in your vehicles, Shell has a grease designed to meet your needs. The Shell Gadus range has been developed to deliver optimum value through:

- Enhanced wear protection
- Long greasy life
- System efficiency

**WEAR PROTECTION**

Equipment wear can reduce system efficiency and service life. Protecting components from wear is fundamental for getting the most out of your investments through prolonging asset life and powering production lines through breakdowns.

The Shell Gadus range of greases offers protection across a wide range of applications. The range includes Shell’s latest extreme-temperature “T” polyurea synthetic greases, which can help to protect bearings under extreme temperatures, heavy loads and contaminated conditions.

**A WIDE RANGE OF THICKENER TECHNOLOGIES**

Different applications and conditions require different thickeners. The Shell Gadus range uses a wide range of thickener technologies, each with unique benefits.

**GADUS S SERIES EXTREME TEMPERATURE GREASES**

For applications carrying medium loads and medium speeds. Available in three grades, with a wide range of performance properties and high lubricity for longer system efficiency. From extreme-temperature grease, which provides good performance in severe conditions, to speciality grease, which meets specific requirements in extreme-duty applications.

**GADUS S3 SERIES**

These greases are designed to provide extended performance in extreme-temperature environments, offering improved efficiency and protection under extreme conditions.

**GADUS S5 SERIES**

These greases are specially designed for use in high-temperature, high-speed environments, offering enhanced protection and performance.

**GADUS S6 SERIES**

These greases are designed for use in medium-temperature, medium-speed environments, offering reliable protection and performance.

**GADUS S7 SERIES**

These greases are designed for use in low-temperature, low-speed environments, offering minimal protection and performance.

**FIT-FOR-PURPOSE PROTECTION**

Select the grease for your needs to deliver optimum savings. For example, using Shell Tactic EMV automatic, single-point lubricators, customers can save up to 35% of maintenance costs by switching to Shell Gadus S2 V100Q for noise-dampening (quiet) applications and Shell Tactic EMV automatic, single-point lubricators.

**SHELL TACTIC EMV LUBRICATORS**

Integrating greasing can be a complex process. Using a Shell Tactic EMV automatic, single-point lubrication system can help to keep your operation running smoothly, saving you time and money. With Shell Tactic EMV, you can save up to 35% of maintenance costs by switching to Shell Gadus S2 V100Q for noise-dampening (quiet) applications and Shell Tactic EMV automatic, single-point lubricators.
Shell Gadus greases have names based on these properties that aim to help you select the right products for your needs:

- **Base Oil**
- **Thickener type**
- **Operating conditions and applications**
- **NLGI grade (consistency)**

Shell Gadus greases have names based on these properties that aim to help you select the right products for your needs.

**Shell Gadus S3 V460D 2**

**Shell Gadus specialty greases**

- **Shell Gadus “T” range**
  - **Shell Gadus T100**
  - **Shell Gadus T200**
  - **Shell Gadus T300**
  - **Shell Gadus T400**
  - **Shell Gadus T500**
  - **Shell Gadus T600**

**Shell Gadus “V” range**

- **Shell Gadus V100**
- **Shell Gadus V200**
- **Shell Gadus V300**
- **Shell Gadus V400**
- **Shell Gadus V500**
- **Shell Gadus V600**

**Shell Gadus “OG” range**

- **Shell Gadus OG 100**
- **Shell Gadus OG 200**
- **Shell Gadus OG 300**
- **Shell Gadus OG 400**
- **Shell Gadus OG 500**
- **Shell Gadus OG 600**

**Shell Gadus automotive greases**

- **Shell Corena S4 R**
- **Shell Tellus S4 ME**
- **Shell Tactic EMV**

**Shell Tellus and Shell Tactic**

- **Shell GadusRail greases**
- **Shell Gadus “OG” lubricants**
- **Shell Gadus automotive greases**
- **Shell Tactic EMV**
- **Shell Tactic EMV**

- **Product benefits**
- **Technology**
- **Viscosity grade**
- **NLGI grade**
- **Specifications and approvals**

**Helpful product names**

- There are at least four properties that you should look for when selecting a grease:
  - **Density type**
  - **Base oil viscosity**
  - **Operating conditions and applications**
  - **NLGI grade (consistency)**

Shell’s Gadus greases have names based on these properties that aim to help you select the right products for your needs.